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# **The Use of the Internet to Support General Aviation Research**

by

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### **Abstract**

For the past few years, innovation in the field of General Aviation (GA) has declined. The reason for this decline has not been because of a lack of ideas, but rather a lack of funds necessary to convert these ideas into reality. NASA implemented the Small Business Innovative Research (SBIR) program in an effort to promote new technology in General Aviation. Under this program, small business with good ideas present them to NASA who reviews them and determines their value potential in the GA market. If the company's idea proves worthy, NASA subsidizes their research in three phases that include the research, testing, development, and production of their product. The purpose of my internship this summer was to use the Internet to promote the work of SBIR companies globally to prospective investors.

## **The Use of the Internet to Promote General Aviation Research**

My studies as an Aviation Professional major at Norfolk State University have instilled in me a desire to follow the latest innovations being researched in General Aviation equipment. As an active duty member of the U.S. Navy and an aspiring Naval Aviator, seeking ways to make flying safer by improving equipment and reducing pilot workload are the primary focuses of my education. My internship at NASA Langley Research Center (LaRC) offered me a chance to promote new aviation technology on the Internet, an interactive global network of multimedia communications that is accessed daily by thousands of individuals and businesses all over the world.

When I first arrived at NASA, I could not even define the word "Internet". My knowledge of it consisted of knowing it existed and that I knew nothing about it. My new mentor and boss for the next ten weeks invited me to a class she was implementing at NASA that taught the basics of the Internet, and how to use a World Wide Web browser. I sat down at a MacIntosh (all I had ever used was a PC based computer) and jumped into this electronic realm of no return. What I found was that the Internet had been revolutionized; it was no longer just a text-based system of mumbo-jumbo but now there were images, sound, video, and more information than I could want in a lifetime. This was called the World Wide Web (WWW) and was a new way of searching the Internet. Needless to say, I got overwhelmed my first day and became frustrated because I knew I was going to be a useless piece of baggage on this project.

I chose to go for it anyway. I spent the next week staring at the 21" monitor of my "personal" MacIntosh Centris 650 (which I still didn't know how to operate yet), and "surfing", not sure of what I was looking for. I buried my face for hours in a MacIntosh user manual and got myself familiar with my new information platform. I also spent countless hours trying to learn Hypertext Markup Language (HTML), the programming language used to author home pages on the World Wide Web. Once the basics were learned, I began to produce work.

The two SBIR companies Tonette Scott and I worked with were Vision Micro Designs, Inc. and Innovative Aerodynamic Technologies. Our assignment was to produce home pages promoting their aviation research and complete the pages prior to the annual Experimental Aircraft Association (EAA) Fly-in Convention scheduled for July 27-Aug 2. For the first week or so, we struggled to get all the information necessary to produce home pages for the companies. At the same time, we were given the assignment of structuring and teaching a World Wide Web class to the faculty of NASA LaRC. Since only three weeks had passed since my first surfing experience, this was going to be a chore. Nevertheless, we tucked our shoulders and took on our assignments head-on.

The WWW classes proved to be the most challenging part of the internship. Tonette and I sat down and discussed the things that made learning the Web difficult for us and developed a class around this. Our classes for the most part consisted of individuals with little to no Internet experience. Since the WWW is now the way NASA transfers technology and information within and outside the base, it is essential that NASA employees learn to use this tool. Over the course of eight weeks, Tonette and I taught up to six class per week, up to ten students per class, and successfully educated (some more than others) over 300 NASA faculty and visiting elementary school teachers from all over the country. The very positive feedback we received from the forms filled out by each of the students reassured me that my handicapped efforts were not in vain.

While continuing to teach the classes, Tonette and I continued to work on the Web pages. Numerous hours were spent learning more HTML, typing and revising information, scanning images on the color scanner in the Data Visualization Lab ( I also had to learn how to use a scanner and Adobe Photoshop), and loading the files and links into a web server. One week before the airshow, we had completed the home pages and had become NASA Langley resources for World Wide Web information and instruction.

The final and most exciting experience of my internship came when I was awarded travel funds and a flight line pass to the Oshkosh airshow. Tonette and I traveled on Friday morning to Oshkosh and helped support the efforts of the NASA World Wide Web team who displayed our home pages and presented NASA's developments in information technology transfer using the World Wide Web. Our booth was visited by a majority of the estimated 1,000,000 pilots and airshow enthusiasts who attended, including NASA Administrator Dan Goldin. Our presentation was extremely successful and we received extremely positive feedback from Administrator Goldin, as well as from Thayer Sheets, the director of the NASA SBIR program.

After returning from the airshow, the remainder of our internship was spent improving the WWW class, teaching the class, and researching the various General Aviation applications of the Internet.